Natural Hazards Workshop
July 14-16, 2003

Eric Holdeman attended the 28th Annual Natural Hazards Conference in Boulder Colorado, July 14-16, 2003. This was a very intellectually stimulating experience. The 200 plus attendees come from a variety of professions, but with a significant mix of academics and researchers working in the field of emergency management and disaster sciences. Attendees noted that there was considerable information that was pertinent to the law enforcement discipline, yet there wasn't one police attendee in attendance. Attendance at future conferences is highly recommended for emergency managers, from the public and private sector. I would be specifically beneficial for King County Office of Emergency Management Staff and other first response agencies. It provides some keen insights into the research that we should be basing our programs and delivery systems upon. There is both technological and sociological studies that can dramatically improve our approaches to disaster preparedness, response, recovery, and yes, mitigation. The conference is held at the same time in July each year, so mark your calendars now for 2004.

What follows are notes from the various plenary and breakout sessions that were attended.

9-11 Evacuations of the Twin Towers: Martha Moore, USA Reporter spoke on the evacuations of the world Trade Center. Basically it was "Delay Meant Death." 99% of the people above the crash site died. Fire personnel rescued not one person from elevators. 16 minutes after the plane hit the North Tower the second plane hit the South Tower. Workers who viewed people jumping from the North Tower left the building immediately and survived. If the boss left or stayed generally determined if their staff lived or died. Some people stopped evacuating when building security personnel made announcements to stay. People who worked in the building in the 1993 bombing left immediately. People in the building didn't have good information on what had happened. Taking the elevators worked for some of the people, in contrast to normal emergency protocols. It took no more than 59 minutes to evacuate. That was when the 2nd plane hit. The retrofitting of the stairwells from the 1993 event was of tremendous value in saving lives. Describing the difference between fear and panic was discussed at length. Academically panic is not a word used casually.

The Impact of Homeland Security on Natural Hazards and Mitigation: I participated on a panel on the impact of Homeland Security on the preparedness, response, recovery and especially mitigation of natural hazards. The major thrust of my remarks was on the impact of Homeland Security on our preparations for natural hazards. Specifically, that work on natural hazards is almost non-existent because of the emphasis and funding that is coming to HLS.

Even though there is lip service being given to “All-hazards” by FEMA, many of the strings that are attached to HLS grants do not allow such an application of these funds. Mike Brown, FEMA Director was also a panel participant. He emphasized the need for local communities to help in educating federal congressional staffs on emergency management issues. FEMA has all new committees to deal with and the challenge is working with staff who know little or nothing about emergency management. This is similar to what Under Secretary Asa Hutchinson had to say when he visited the Puget Sound several weeks ago.

Managing Fear and Anxiety: Again there was a discussion of the terms fear vs. panic. How the private sector health and medical community interfaces with the public health community is important to look at.

Many times it is our mental perceptions of events that causes the fear. Sometimes people don’t want to know what puts them at risk. Getting people beyond the state of denial. It was noted that the law enforcement community and emergency managers communicate very differently about risk. Partial and incomplete messages cause undue concern. The language of panic has been integrated into the discussion since 9-11 and the Anthrax attacks. The popular thought is that we have a significant portion of our population, which is vulnerable to messages that emphasize problems when there are shortages of critical supplies. This paradigm is being reinforced via exercises. It is important to get information to the sources of information that people do believe. This may be the American Red Cross, churches, other community groups. Reaction to raising the color code from yellow to orange changed dramatically between the one-year anniversary and the February 2003 raising of the alert level. People expected the one-year anniversary elevation, but were concerned with the lack of definition of the hazard when it was raised again in February of this year.

Warning in the 21st Century. Public Warning: A Social Science Perspective: The idea is to develop a local planning guide for use by local emergency managers. A draft has been completed. Some of the structure of the book will include:

- What to warn about
- Who to warn
- Priming the response
- Knowing when to warn
- Alerting the public
- Who should say it?
- How to deliver message
- Determining public response
- Handling special issues
- Ending the warning

There is an increased interest in public warnings. The warning system is not linear any more. It is more of a web. We have a web of technologies that may or not be linked. Warnings are an ongoing conversation. It starts with a conversation on risk before the event. We need to dispel the legacy of a linear warning system. New system is much more complex. Need to plan with various partners. They have defined a state-of-the-art warning system. Analysis of the work by a panel of experts followed. You need to warn people of the hazard and give them instructions. You need to trust people with the threat information. Word the warning so that your Grandmother can understand it. Pre-event information is critical. People need to practice decision making under circumstances that are made less than ideal—incomplete information. For now only 5-15% of people get their warning information via the Internet. Getting the attention of decision makers on warning issues is key. Warning is complex. You need a dialog before the event. The dialog between first responders and emergency managers needs to improve. More people are interested in the topic. Earth911 check it out on the web. It was mentioned that in Washington State they are having success in expanding the AMBER Plan effectiveness. Defining Alert, Warning and Notification needs to be done more effectively. I may have the opportunity to be part of the local review process on the manual that has been developed.

How are You Using GIS: Attended an early morning session on the use of GIS and how different organizations are using it as a tool to support research and application in the field of emergency management. It was noted in the discussions the book “Heat Wave” that details the Chicago disaster is an excellent publication. EPA has their own software for GIS. Go to EPA.gov and do a search for CAMEO which is a plume generating product used for chemical spills. This does have some ability to link back to ESRI products. Lots going on across the spectrum for practitioners of GIS. Linking efforts between different organizations is difficult. It appears that there is duplication of effort across the spectrum. Firewise is trying to get the GIS tool in the hands of practitioners. They do quite a bit of training. One of the big issues is getting the information into the hands of emergency professionals. University of South Carolina has put all the storm data for the entire USA into a database. POC is Christopher Emrich, Hazards Research Lab, University of South Carolina, 803-777-1699. Questwithgis.org is a web site. It used elementary school kids to get data entered on each elementary school in a state. Geomap.gov shows where all the wildland fires are in the USA. The general public is using this site to look at where they personally are in relationship to an ongoing fire. They’ve had as many as 2M hits per day. **Security of the data is something that needs to be addressed.**

In a separate conversation with John Pine, he offered being able to bring a CAMEO class to King County that meets Homeland Security (HLS) requirements.

The Hidden Victims of Disaster: These are people such as ethnic minorities and people with disabilities. This session directly addressed what Joan Maza, our America Corps staff person is working on in King County. These are people who fall through the cracks. They are most vulnerable to the disasters that strike our county. They have inadequate housing, located in high hazard areas in substandard housing. The definition of who is a victim is generally set by government agencies. People who are partially impacted by a disaster are many times left out of the recovery and response process. There are many cultural norms that impact a people. Their cultural background may cause them to separate themselves from any government aid. And, there are those who are excluded from getting information on assistance because they have no way to access it. What about translating our emergency management plan into other languages? There are social lepers who are virtually untouchables due to our social norms. Note that there are now more Arab Christians then there are Arab Muslims living in the United States. It was noted that for people of the Islam faith, they first and foremost identify themselves as Muslim based on their religious belief. An American Red Cross speaker made the point that our collaboration will be the most effective response to any disaster. No single agency or discipline is the linchpin organization. Over 500 different organizations responded to needs emanating from the 9-11 events. Acts of compassion are often times events that helped get victims through a disaster, and what they remembered months after the event.

Threat scales are not warnings. But they can communicate an increased risk to people and populations. Warning message content needs to be precise with location specifics, have strong recommendations for actions to take, and specify a time. The color code HLS Warning system alerts have been terrible in regards to the above standards. If you can give visuals this would be a great enhancement to the warning message. [what if we garnered research support in constructing an urban evacuation plan for the Seattle metro area?]. It is clear that we still lack a national warning strategy. Warnings require us to combine sociology and technology information. Check out sra.org ? It is a risk management site. We don't have simple answers to complex issues. Elected officials need to be prepared to address the complexities of disasters and warnings specifically. One needs to be careful not to withhold information both for credibility and liability.

Transportation Systems in Emergencies: Transit carries more people in six weeks than one years worth of airplane flights. Transit is both impacted by disasters and can be a target of terrorists. You need emphasis on employee training, emergency preparedness and public awareness. Coordination between transit agencies and emergency planners is needed. There are any numbers of scenarios that require a close interface. There have been almost zero studies done. Evacuation of special needs populations will need transit assistance. Public and private transit agencies need to look for ways to collaborate. There is a huge issue of multiple agencies all planning on using the same/single transit

agency in the region. Social science people need to be at the table with people working the evacuation/transit issues. Transportation is the circulation system of community bodies.

What We Have Learned Since 9-11: NYC didn't have an alternate EOC. 100 police agencies--none of which could talk to one another. [Idea: invite John Pine to do a session on Tort Law for next Elected Officials Seminar] There was a rapid need for technical expertise. You need redundant data systems. Need Memorandum of Understanding (MOU) on organizational plans for data information and information sharing. Remote sensing was not all that helpful to the people on the ground. Data access and quality is an issue. Why didn't we have a building inventory, accurate maps of where the utilities are, census data for building occupancy-during the day. Digital communications between the levels of government did not happen at first. Private vendors can oversell the technology and its capabilities. Information overload did occur once all the systems came on board. There is an overreaction to the securing of data for homeland defense. We need better interoperability for GIS data during emergencies. Need better spatial estimations of tourists, homeless and undocumented workers. Enhanced development of geo-security at various scales from local to national. See "The Geographical Dimensions of Terrorism," edited by Susan Cutter. Networked forms of organization are significant. There are complex and blended networks of public/private; existing/emergent; planned/unplanned; formal/informal. There also was network flexibility and resilience. This network of partnerships contrasts greatly with command-and-control hierarchies. This has implications for future extreme events. There is a huge need for improvisation and creativity. Many times this is driven by unpredicted events.

History of Major Terrorist Events and Their Outcomes: There was a discussion of defining events and what caused persons to take action after such events. There is a time chart that shows both the timeline and how these events had various impacts. The formation of the Department of Homeland Security (DHS) was very rapid. A matter of months vs. what often takes years to achieve a similar action. Generally the generation of new public policy is reactive, and response to terrorist events is typical of this. At the federal level there is much more emphasis on threat than there is the vulnerability and risk analysis. The legislation and executive directives have totaled about 18 documents in the last two years. This is a staggering amount of legislation in a compressed time frame. The timeline series is available www.disaster-timeline.com more information is available at www.disaster-central.com

How State and Local Governments are Dealing with Homeland Security: The three researchers who looked at Homeland Security in Washington, Texas and Pennsylvania made presentations. The tension that exists in trying to establish regional approaches to Homeland Security is profound in all the states. In Pennsylvania there was significant push back from local emergency

management to the regional approach. It was noted that in Pennsylvania there is two distinct and different approaches in the two major population centers of Philadelphia and Pittsburgh. In Pittsburgh they have a history of disasters so they had learned the need for regional approaches. The fact is that even a large city cannot go it alone. However, in Philadelphia there wasn't the same history of events and responding together, so that the environment was contentious toward collaboration by regional partners. The competition for resources is intense. Professor Steven Stehr who wrote the report on Washington State presented during this session. He has principally been active on natural hazards research previously. He noted the consistency of the issues between the States of Texas, Pennsylvania and Washington were very evident. It was noted that Washington State was ahead of the curve in planning for terrorism. The early establishment of the Committee on Terrorism (COT) was one success element. The Pacific Northwest law enforcement community has a long history of dealing with domestic terrorism. Y2K preparations were also a significant plus. It was noted that the public disclosure laws in Washington State have made information sharing difficult. The State Legislature did take action to close some of the loopholes in public disclosure. How do we know that we are spending the resources wisely? What is the balance between prevention and response? Lastly, all three presenters agreed that a key discriminating factor to regions being able to respond effectively is the establishment of personal, informal, long-term relationships. This helps significantly when a response requires regional coordination.

Mitigation Around the Glob: Japan has a long history of disasters. They thought they were doing pretty well until the Kobe Earthquake. They now have an emphasis on long-term mitigation for natural hazards. In Kobe the level of port activity has still not returned to its previous high even after eight years. This is not because of a failure to repair the infrastructure, but because shipping lines left and did not return. In doing mitigation it is difficult to define the desired end state.

In Canada the emphasis remains on natural hazard disasters. While there are homeland security issues, they see their major threat coming from natural disasters. Their equivalent of FEMA does not have the same authorities as here in the USA, but they do have a leadership role in cyber security.

If you think we have problems, how would you like to be a Central American economy struggling to survive on a daily basis with little or no emphasis on disaster prevention?

Conclusion: This was a great conference!